

REMARKS

The above Amendments and these Remarks are in reply to the Office Action mailed May 20, 2005. Claims 1-56 were pending in the Application prior to the outstanding Office Action. The present Response amends claims 1, 3, 7-11, 19, 21, 25, 26, 37, 39, 43, 44, 55 and 56, leaving for the Examiner's present consideration claims 1-56. In addition, Figure 1 is amended and new Figure 2 is added. Reconsideration and withdrawal of the rejections are respectfully requested.

DRAWINGS

The drawings are objected to under 37 CFR 1.83(a) and 37 CFR 1.121(d).

In Figure 1, project and its 'files, paths, libraries, dependencies among files, and configuration information' are shown in computer program 101, 'a scanner, a parser, a name resolver, a semantic checker and a code generator' are shown in language module 103. In addition, links representing the interactions between the language modules are also shown. 'Java environment' in claim 3 is removed. 103 and 106 have been renamed as 'language module' and 'language interface,' respectively.

In Figure 2, the scanner generator and parser generator for creating the scanner and the parser respectively in each language module are shown. As states in claim 1, the 'language-dependent portion of the compilation process' is a function performed by each language module, not a displayable object in the drawing. Applicant respectfully requests that the objections with respect to the drawings be withdrawn.

CLAIM REJECTIONS UNDER 35 U.S.C. § 112

Claims 13, 31 and 49 are rejected under 35 U.S.C. §112(b) as allegedly failing to comply with the written description requirement.

Paragraph [0026] in the specification specifically describes that “one language module may be able to extend another language module” and uses Java language as a non-limiting example to illustrate the enablement of this feature. Applicant respectfully requests that the Examiner reconsider and withdraw the 112 rejection.

CLAIM REJECTIONS UNDER 35 U.S.C. § 102

Claims 1, 3-19, 21-37, and 39-56 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by *Chan et al.* U.S. Patent No. 6,799,718 (hereinafter *Chan*).

To anticipate a claim, every element of the claim must be disclosed within a single reference. The present invention is distinguishable from *Chan* in at least the following ways:

- The present invention teaches a source **code compilation** framework while *Chan* teaches a tool for source **code development** assistance. *Chan* teaches “providing development assistance for multiple languages in an IDE”, which “makes the problem of developing such mixed language programs much easier” (column 2, lines 53-60). In other words, it teaches a development tool that helps a programmer to edit/develop multi-language source codes in IDE, not a compilation tool as claimed in the present invention that actually compiles such multi-language source codes into target codes. In fact, none of “syntax highlighting, structure analysis, error reporting, completion assistance and context-sensitive help” (column 2, lines 57-59) is part of a typical compiling process. Although a compiler (572 in Figure 5) is used in *Chan*, it is for the sole purpose of compiling the structural analysis and its errors for display (column 9, line 35-40) and no further details of the compiler is given. Since “structure analysis and error reporting features provide information as the program is developed” (column 1, lines 30-31), compiling such structural analysis and its errors is to help the programmer editing/developing the multi-language source codes, which is totally

different from actually compiling such multi-programming-language program into target codes.

- The present invention allows language modules to interact with one another during the compilation process while *Chan* does not allow such interaction. In *Chan*, “the code from each language is parsed separately” (column 9 line 17-18) and the modules processing languages L2 (530, 540, 550, etc.) and L3 (534, 542, 556, etc.) do not interact with each other as shown by the flow diagram in Figure 5. Such interaction is not required in *Chan* because it is a code development/editing tool, not a compilation tool as the present invention, so source codes from different languages can be processed in totally separate ways. In contrast, the present invention allows one language module to interact with another (claim 1, 10 and 11), which is especially important for the compilation of source code having nested (multi) programming languages.

Therefore, *Chan*, which teaches development assistance of a multi-language program, cannot anticipate the multi-programming-language compilation process of independent claims 1, 15, 19, 33, 37, 51, 55, and 56. Since claims 3-14 depend claim 1, claims 16-18 depend on claim 15, claims 21-32 depend on claim 19, claim 34-36 depend on claim 33, claims 39-50 depend on claim 37, and claims 52-54 depend on claim 51, *Chan* cannot anticipate claims 1, 3-19, 21-37, and 39-56 for at least this reason, and Applicant respectfully requests that the rejection with respect to these claims be withdrawn.

CLAIM REJECTIONS UNDER 35 U.S.C. § 103

Claims 2, 20 and 38 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *Chan* in view of Stone, et al., U.S. Patent No. 6,804,686, (hereinafter *Stone*).

Prima facie obviousness rejection requires the Examiner to show that the prior art alone or in combination teaches or suggests all elements of the claimed invention. *Stone* teaches “providing a Unified Modeling Language (UML) diagram of a program for display in a graphical

user interface" (Abstract). Since it does not teach the compilation of a file written in multiple programming languages, it cannot anticipate the multi-programming-language compilation process in independent claims 1, 19, and 37. As discussed in previous section, these independent claims cannot be anticipated by *Chan* either. Since claim 2 depends on claim 1, claim 20 depends on claim 19 and claim 38 depends on claim 37, *Chan* in view of *Stone* cannot render claims 2, 20 and 38 obvious under 35 U.S.C. § 103(a) for at least this reason, and Applicant respectfully requests that the rejection with respect to these claims be withdrawn.


CONCLUSION

In light of the above, it is respectfully requested that all outstanding rejections be reconsidered and withdrawn. The Examiner is respectfully requested to telephone the undersigned if he can assist in any way in expediting issuance of a patent.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 06-1325 for any matter in connection with this reply, including any fee for extension of time, which may be required.

Respectfully submitted,

Date: 6/29/05

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